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## GOOD ROADS MOVEMENT

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There appears to be no doubt that the automobile, as its use has developed in this and other countries, has given an impetus to the improvement of the condition of highways and roads during the last few years that nothing in the history of highways has equaled or even approached. It is in a large measure due to this that the subject of good roads is absorbing so large a portion of the public attention, and which gives so strong an indication of the general interest in the Good Roads Movement. It should, however, be realized that the attention given to this subject is, in itself, not to be regarded as a safe guide to the action of public bodies for the reason, as in all questions of this sort, the determination of the people overreaches itself and takes action before wise counsel can be adopted. Therefore, many steps have to be retraced before a safe and sound solution of such a vexed question can be reached.

It does not seem necessary to point out that the development or evolution of the transportation question has been one of very slow growth and has followed generally the evolution of the people themselves. It has often been stated that the condition of the public roads in any civilized community was a measure of the material standing of that community, and undoubtedly, to a certain extent, this is true, but it is still more true that communities or assemblages of communities do give their attention to that matter which presses most earnestly upon their material progress, even if by so doing the refinements of civilization are left in the background.

In the United States, which covers a territory so large that practically all the countries of Europe might be contained within its borders, the consideration of the location, construction and maintenance of public roads as a scientific problem has been subordinated to more immediately pressing considerations. The fact that this vast area has been uninhabited by civilized beings until within comparatively recent times, and that its exploration, settle-

ment and development have been phenomenally rapid, has brought about a condition of political and social affairs that has never previously existed in any other country. In short, the process of development towards civilization in the old countries of the world has been accompanied by a parallel development in its means of transportation; whereas, in this country, which was settled by colonists, who brought with them all the inherited civilization from the country which gave them birth and thrust them at once into a continuous struggle with savage nature and savage men, the relative importance of their surroundings immediately became very different from what had existed previously, and so a distorted relation was created and their lines of evolution changed.

The transportation problem, as it first presented itself to these early settlers, was solved by the use of the ocean, river courses, and afterwards by the construction of canals which connected these waterways. By degrees roadways took the place of trails, which led gradually farther and farther into the wilderness, but their relative importance never took the same ground as it had in Europe. There the transportation of armies and munitions of war had brought the question of transportation very forcibly before the governments of those countries, while here it simply meant the easiest and most unscientific means of communication between small settlements and their market, or to the nearest point on the rivers or upon the seacoast.

As the agriculture of the country, as well as its mechanical and industrial products increased, a gradual improvement in the roads outlined above took place, but as I have indicated, never did they show the relative importance that they had in other countries. If it had not been for the invention of the steam engine, it is difficult to see how this great country would have reached its present state of progress, except after many years of slow development. The fact, however, that rail transportation became effective at this critical point in our history, has not required an answer to this question. The railroad system, as it developed in the United States, answered the needs for many years of other means of transportation, except for the short distances that existed between the farms or the factories and the railroad station.

The history of the growth of the railroads of the United States is probably the most surprising industrial development in

the history of the world, and to-day more than half of the railroad mileage of the entire world is within the limits of the United States. Not much over fifty years ago, the whole of the Middle West was an undeveloped region and if, instead of railroads, we had had to depend upon the ordinary wagon road as it then was and, in most cases still is, how much do you think of that wonderful human prosperity seen everywhere through this region would be in existence to-day? The extraordinary initiative and courage of a comparatively small number of railroad men and those who controlled capital, thrust the line of steel into the wilderness and cities and towns grew up as if by the hand of magic.

I am attempting to point out the difference in conditions of transportation and its relation to the people themselves between this country and the older civilized nations of Europe, and how, from the very nature of things, the present unsatisfactory condition of our highways is not so much a demonstration of our lack of civilization, as it is an evidence that our efforts have been turned towards the solving of problems more nearly pressing upon our well-being. It is fair, therefore, to say in extenuation of the present conditions, that although the roads of the United States may be, as a whole, the worst to be found in any civilized country, it is because our attention, our resources and our brain have been absolutely absorbed in turning a wilderness, 3000 miles in width, into the most prosperous country in the world both in wealth of product and in political freedom and advancement. It is only within a few years that the less densely populated areas have felt the need for improvement in their highways, although it is true that in the older portions of the country a more or less careful study of roads and streets and highway bridges has been made and has, in a measure, kept pace with that of other countries; it is, nevertheless, true that never in the history of the United States has there been such a thing as a consistent system, either for the location, construction or maintenance of the roads and highways, even in the older portions of the country.

It is a reasonable assumption that the people of the United States will in time as effectively and efficiently solve a problem of this importance and magnitude as they have solved other problems which seemed more overwhelming in the past, and it is plain enough that the present intensity of public interest on this subject is so

concentrated and insistent that the solution of this question must be solved, and although in the process we may spend many thousands of dollars in vain, and lose much valuable time, the final adjustment will be in accordance with reason and economic value. It was suggested at the beginning of this article, that the automobile has probably done more to give impetus to this movement than any one thing. The automobile would not, however, have been able to produce this result if the people themselves had not been ready for the question, and the automobile is merely an incident.

The Good Roads Movement, which is filling so large a portion of the horizon at this moment, undoubtedly carries with it elements of danger, similar in effect to the danger that attends any great public movement. When the minds of the great mass are moved towards one end without direction or control, it involves the expenditure of money unwisely, and many acts which have to be reconsidered, and this largely because the actions were taken without proper preparation. This danger no doubt lies in a large measure in the public sentiment expressing itself in the desire for a result, without consideration of the way to produce that result, or of the unconsidered demand by the masses which affects the political situation and the minds of politicians. The governing bodies, whether state or national, being composed of many individuals, and the sole responsibility not resting on any one, do not seem to give sufficient weight to their responsibility, both as to appropriating money and to its wise expenditure. The members of these bodies, pressed by the insistent cry of their political supporters, will make available public funds without having digested any plan for their wise use.

At a meeting recently held in Richmond, Virginia, at which those interested in this subject met for the purpose of discussion and also for the purpose of pushing along this cause, it was sufficiently evident that the demand for federal aid was to be considered as a national issue and many politicians, as well as those who were not politicians, most vehemently urged this policy and demanded it of their representatives in Congress. Not one of them, so far as I could learn, had even considered a feasible and reasonable way of spending the fifty million dollars which they insisted upon as a Congressional appropriation.

If this proposition had been seriously considered, would they not realize that fifty millions of dollars is a mere drop in the bucket toward the construction of any system of national highways? And that, without intelligent supervision of trained and educated road engineers, the expenditure of this sum, or any other sum that Congress might appropriate, would be made without beneficial results, even to those who were most nearly affected?

Many plans have been suggested by members of Congress in the shape of bills presented in their respective houses, which appear to me to have been formulated mainly to satisfy the clamor of the voters who were their supporters, but which upon intelligent consideration appear to have little foundation in reason or merit. There have been, however, certain well-considered plans which embody a scheme for national highways, and which define the location and scope of a national highway system under a particular branch of the United States Government, and which suggest plans of location with greater or less detail, and which, if wisely carried out, would not only create a scheme for a national system of highways, but would also provide a school for the proper education and training of road engineers. This would be of vast material benefit to the country. It would also have the effect, properly executed, of affording a standard method of construction and maintenance over the entire country, that would approach the present admirable system so long used in France.

It does not seem to me to be susceptible of argument that a question involving so vast an interest and so tremendous an expenditure of money as this, or any other plan, would involve, should be acted upon by Congress without the most careful thought both as to the ultimate cost and the economic way of bringing it about.

The bills so far presented in Congress, and there are many of them, provide for the expenditure of sums ranging from a few millions to a hundred million dollars, or even more, to be divided among the various states as national aid to those states by the National Government. The amount and location would probably be determined largely by the political skill of the individual members of Congress; this would undoubtedly produce a condition of chaos that would be a source rather of shame than credit to the people of the country. How much wiser would it be for Congress to refer the

consideration of the whole question to the President of the United States with the authority to appoint a commission which should give the entire matter the most careful and exhaustive study and examination, and render a report of its findings with recommendations for legislation.

The insistence of the public for a more reasonable system of public roads has produced, in many states, laws which have created highway commissions with greater or less power and responsibility. These commissions are composed of men selected by the various state governments, and are of varying value, according to the wisdom and sincerity of the appointed powers. All these officials are, however, badly handicapped because there are so few trained road engineers in the United States, except as they have been developed by the commission themselves. The result of course is that, in some states, satisfactory results have been brought about and some approach made to a practical system by regular and studied method, but in most states, the expenditure of the public funds is without lasting benefit to the public.

It is impossible, under any existing condition in the United States, to make sure of any consistent improvement. We have no technical school for training such engineers, except as courses have been introduced in small ways in certain universities. Columbia alone, within the year, has introduced a graduate school of highway engineering. We have no present standard of method or administration throughout the length and breadth of this great country, and no well-digested methods except at isolated points.

Up to the present time in the United States, as I intimated in the first part of this paper, the efforts of our greatest minds have been directed wholly to the material growth of the country at large, and have not centered themselves upon the problem of highway science. The tremendous present demand will undoubtedly enforce the attention of greater intelligence than has yet been used, and there is no doubt in my mind that an adjustment will take place, which shall be to the advantage of all. This cannot be done, however, by following the undefined paths suggested in the oratorical efforts of public speakers whose ambition seems to be to excite the assuring applause of an unconsidering crowd.

From the British Northwest to the Gulf of Mexico, and from Nova Scotia to Southern California, the cry for better roads is

heard on every hand. States and territories and colonies, counties and cities are issuing bonds and are borrowing money for the specific purpose of building roads, and among them all hardly a single one can furnish men properly educated and trained to spend these tremendous sums economically or properly. There are no men in America, with very few exceptions, whose technical education fits them to build roads, and those who are fitted by experience, are generally experienced only along certain lines which come within the scope of their particular work. It may not be generally appreciated, but it is, nevertheless, a fact that it would be almost impossible at this moment to select a force of road engineers in this country, fitted to take charge of the construction and maintenance of a National System of Highways of the kind and character which our Government could properly undertake. The demand, therefore, for a proper and systematic training of such officials along lines similar in character and scope to those practiced in the French School of Roads and Bridges, is imperative, and is more urgent from my point of view than the appropriation of money until we have learned how to spend it.

I think that the public mind should, so far as is possible, be directed along two lines of thought before it is allowed to so far act upon political sensibilities of Congress as to produce actual results. These two lines of thought are: First, to determine how to spend the money that it is proposed to appropriate, and, second and incidental to the first, how to produce men trained to take charge of such expenditure, and this is intended to apply to local and state considerations as well as national.

These two points seems to me to embody the entire issue as it is raised by the Good Roads Movement.